Exhibit "A"
Clean copies of the Specification and Claims as Amended

In the specification, page 8, lines 6 and 7, amend the paragraph to now read:

Referring specifically to Figure 1A and 1B of the drawings, schematic flow diagrams 2 and 2' are disclosed, these diagrams each schematically including several sections arranged successively and substantially in-line to produce the unified novel carded filter media 3 and 3' such as disclosed in Figures 2 and 3 respectively of the drawings. The disclosed flow-diagrams, each broadly includes four sections – namely, the mixer-blender sections 4 and 4', the carding sections 6 and 6', the heating sections 7 and 7' and the calendaring sections 8 and 8'. Mixer-blender section 4, as shown in Figure 1A, discloses three spaced mixer-blenders 9, 11 and 12. These mixer-blenders 9, 11 and 12 can be arranged with the outlets at different spaced levels to feed well blended chopped fibers of selected sizes to endless collector belts 13, 14 and 16, respectively spaced at different selected levels to cooperate respectfully with the outlets of mixer-blenders 9, 11 and 12. Spaced belts 17, 18 and 19 of selected thickness layers of well blended chopped fiber filter media mats are formed respectively on endless collector belts 13, 14 and 16 and are passed to the carding section 6. In a manner generally known in the art and not shown herein, chopped fibers measuring approximately one half (1/2) inches to one and two (2) inches in length of selected coarse to fine deniers, as determined in accordance with the present invention described hereinafter are passed to mixer-blenders 9, 11, and 12, respectively, from hopper feeders, beater openers, conveyor fans, fine openers and vibra feeders. In accordance with the present invention and based on environmental conditions the fibers fed to mixer-blenders 9, 11 and 12 can be of several combinations of coarse fibers, intermediate fibers and fine fiber layers. For example, when two layers of media are involved combinations of either

coarse fibers and intermediate or fine fibers or even intermediate and fine fibers can be employed. When three layers of media are involved combinations of coarse fibers intermediate fibers, and fine fibers can be employed. A "coarse media" layer of selected thickness with all fibers measuring approximately between one half to two (1/2 -2) inches in fiber length advantageously is considered to be of approximately thirty (30) percent fifteen (15) denier fibers, of approximately thirty (30) percent six (6) denier fibers and of approximately forty (40) percent of six (6) denier low melt fibers. An "intermediate media" layer with all fibers measuring approximately between one-half to two (1/2 – 2) inches in fiber length advantageously is considered to be of approximately forty (40) percent six (6) denier fibers, of ten (10) percent three (3) denier fibers and fifty (50) percent four (4) denier low melt fibers. A "fine media" layer with all fibers measuring approximately between one half to two (1/2 – 2) inches in fiber length advantageously is considered to be of approximately forty (40) percent three (3) denier fibers, ten (10) percent one (1) denier fibers and fifty (50) percent four (4) denier low melt fibers. In the carding section 6 of Figure 1A, three spaced carding roll assemblies 21, 22 and 23 are shown. Each assembly includes a spaced main carding roll 24, 26, and 27, respectively, with each having a cooperating smaller semi-random carding roll 28, 29 and 31, respectively. Suitable guide roll sets 32, 33 and 34, respectively, are provided with each carding roll assembly 21, 22 and 23 respectfully to insure that the spaced carded fibrous filter media belts are properly passed in spaced alignment to heating section 7 and through the spaced open-ended heating oven 37 and spaced calendaring section 8 which includes the cooperating spaced upper and lower calendaring rolls 38.

Exhibit "A"

In the Specification, page 14, line 7, amend paragraph to now read:

In accordance with the novel invention this calculation can be made by the formulas expressed as:

$$\frac{1}{M} = \varepsilon_i \varepsilon_{i+1} .. \varepsilon_n (\sum_{i=1}^{n} \frac{1}{M_i})$$

wherein the porosity "ε" is the ratio of the pore volume to the total volume of medium, "Σ" is the summation from "i" = 1 to n, and "M" is the mean flow pore diameter of the filter media layers and with the air frazier permeability of said three layered medium being expressed by the formula:

$$\frac{1}{v} = \varepsilon_i \varepsilon_{i+1} .. \varepsilon_n (\sum_{i=1}^{n} \frac{1}{v_i})$$

wherein "v" is air frazier, fluid velocity, in cfm/square foot, the porosity, "ε" is the ratio of the pore volume to the total volume of medium; and "Σ" is the summation from i = 1 to n.

Exhibit "A"

In the title of the Specification, amend to now read:

TITLE OF INVENTION: PRODUCT AND METHOD OF FORMING SUCCESSIVE LAYERS OF FACE-TO-FACE ADJACENT MEDIA WITH CALCULATED PORE SIZE

Exhibit "A"

Claim 1, line 2, amend to read as follows:

1.) A multi-thickness filter media comprising a combination of at least two successive adjacent face-to-face thicknesses of selected filter fiber sizes with each thickness having fiber sizes so that the pore size characteristics of one thickness differs from that of an adjacent thickness with said fibers of one thickness being comparatively finer than said fibers of said other thickness and with the fiber sizes and pore sizes of said successive adjacent face-to-face thicknesses of fibers being calculated including factors of relative thicknesses and relative pore sizes with an arrangement so that the overall average pore size of the combined successive thicknesses is smaller than that of the average overall pore size of that of the finest fiber thickness, so as to optimize filtration performance efficiency.

Exhibit "A"

Claim 2, line 1, amend to now read:

2.) The filter media of Claim 1, said fibers of each thickness being carded and chopped and substantially opened and aligned.

Exhibit "A"

Claim 8, line 1, amend to now read:

8.) The filter media of Claim 7, said [carded, chopped] fibers having low melt characteristics with said layer bonding means comprising a thermal binding.

Exhibit "A"

Claim 14, line 6, amend to now read:

14.) The filter media of Claim 1, wherein said thicknesses comprise a coarse thickness layer and an intermediate thickness layer of fibers all of approximately one half to two (1/2 – 2) inches in length with the coarse thickness layer advantageously approximately comprised of thirty (30) percent fifteen (15) denier fibers, thirty (30) percent six (6) denier fibers and forty (40) percent six (6) denier low melt fibers and the intermediate thickness advantageously comprised approximately of forty (40) percent six (6) denier fibers, ten (10) percent three (3) denier fibers and fifty (50) per cent four denier (4) low melt fibers.

Exhibit "A"

Claim 15, line 1, amend to now read:

15.) The filter media of Claim 1, wherein said layers comprise a coarse thickness and a fine thickness of fibers all of approximately one half to two (1/2 – 2) inches in length with the coarse thickness advantageously comprised approximately of thirty (30) percent fifteen (15) denier fibers, thirty (30) percent six (6) denier fibers and forty (40) percent six (6) denier low melt fibers and the fine thickness advantageously comprised approximately of forty (40) percent three (3) denier fibers, ten (10) percent one (1) denier fibers and fifty (50) percent two (2) denier low melt fibers.

Exhibit "A"

Claim 18, line 10, amend to now read:

18.) A multi-thickness filter media comprising at least three different fiber sizes in successive horizontally extending adjacent face-to-face independent thicknesses of carded, chopped fibers, said carded, chopped fibers of each independent thickness having a combination of fibers and pore size characteristics with the carded, chopped fibers of each independent thickness being substantially opened and aligned, the fiber size characteristics from downstream toward upstream thicknesses being approximately one to four (1-4), six (6) and at least twenty (20) deniers from downstream finer denier thickness toward said upstream coarser thicknesses, with pore sizes increasing from the finer downstream lower denier thickness toward the coarser upstream higher denier thickness; said adjacent face-to-face thicknesses being bonded by a selected acrylic binder, the carded fibers in said thicknesses being calculated including factors of relative thicknesses and relative pore sizes with an arrangement so that the overall average pore size of that of adjacent successive thicknesses is smaller than that of the average overall pore size of said independent finest fiber thickness calculated by the formulas expressed:

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$$\frac{1}{M} = \varepsilon_i \varepsilon_{i+1} \ldots \varepsilon_n (\sum_{i=1}^{n} \frac{1}{M_i})$$

wherein the porosity "ε" is the ratio of the pore volume to the total volume of medium, "Σ" is the summation from "i" = 1 to n, and "M" is the mean flow pore diameter of the filter media thicknesses and with the air frazier permeability of said three thicknesses filter medium being expressed by the formula:

$$\frac{1}{v} = \varepsilon_i \varepsilon_{i+1} \ldots \varepsilon_n (\sum_{i=1}^{n} \frac{1}{v_i})$$

wherein "v" is air frazier, fluid velocity, in cfm/square foot, the porosity, "ε" is the ratio of the pore volume to the total volume of medium; and "Σ" is the summation from "i" = 1 to n.

Exhibit "A"

Claim 19, line 13, amend to now read:

19.) A method of manufacturing filter media comprising: collecting a first independent measured thickness weight of chopped fibers in a mixer-blender zone, said first independent measured thickness weight of chopped fibers being of selected denier and pore size; collecting at least a second independent measured thickness weight of chopped fibers in a mixer-blender zone to be successively joined in overlying face-to-face thicknesses relation with said first measured thickness weight of chopped fibers, said second measured thickness weight of chopped fibers being of selected denier and pore size different from said denier and pore sizes of said first measured thickness weight of chopped fibers with said fibers of one independent thickness being finer than said fibers of said other independent thicknesses; passing said first and second measured thickness weights to a carding zone to open and align said chopped fibers in each said successively joined filter media thicknesses having face-to-face relationship to maximize particulate dirt holding capacity and to increase efficiency with the thicknesses being calculated with an arrangement including factors of relative thicknesses and relative pore sizes so that the overall average pore size of that of successive face-to-face thicknesses is smaller than that of the average overall pore size of the independent finest fiber thicknesses.

Exhibit "A"

Claim 20, line 1, amend to now read:

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20.) The method of manufacturing filter media of Claim 19, wherein said face-to-face filter media thicknesses are selected in said mixer-blender zone to have a decreasing denier and decreasing pore size when positioned in an upstream to downstream line of flow during filtering operation.

Exhibit "A"

Claim 23, line 1, amend to now read:

23.) The method of manufacturing filter media of Claim 19, wherein at least one of said filter media thicknesses is of low melt fiber, said filter media thicknesses being bonded to each other by heating.

Exhibit "A"

Claim 25, line 1, amend to now read:

25.) The method of manufacturing filter media of Claim 19, wherein said calculation of face filter media thicknesses is expressed by the formulas:

$$\frac{1}{M} = \varepsilon_i \varepsilon_{i+1} \ldots \varepsilon_n \left(\sum_{i=1}^{n} \frac{1}{M_i} \right)$$

and:

$$\frac{1}{v} = \varepsilon_i \varepsilon_{i+1} \ldots \varepsilon_n \left(\sum_{i=1}^{n} \frac{1}{v_i} \right)$$

with the porosity "ε" is the ratio of the pore volume to the total volume of medium, "Σ" is the summation from "i" = 1 to n, and "M" is the mean flow pore diameter of the filter media layers and "v" is fluid velocity in cubic feet per minute over square feet (cfm/sq. ft.).

Exhibit "A"

Claim 27, line 1, amend to now read:

27. A method of manufacturing multi-layered filter media comprising: collecting in a mixer-blender zone at least a first and second layer of chopped fibers in separate independent thickness layers, each layer of filter media being of measured weight with at least one layer being of low melt fibers with said fibers of one independent layer being finer than said fibers of said other independent layer fibers; passing each layer through a carding zone including separate successive carding zone sections for each to open and align the fibers of each layer and to position the first and second layers in adjacent face-to-face relation; passing said adjacent face-to-face layers to a heating zone of sufficient heat to melt bind said layers in fast relation, said carded fibers in said bonded layers being calculated including factors of relative thicknesses and relative pore sizes with an arrangement so that the overall average pore size of the majority of pores of combined adjacent successive layers is smaller than that of the average overall pore size of the majority of pores of said independent finest fiber thickness layer calculated by formulas expressed:

$$\frac{1}{M} = \varepsilon_i \varepsilon_{i+1} \ldots \varepsilon_n \left(\sum_{i=1}^{n} \frac{1}{M_i}\right)$$

and

$$\frac{1}{v} = \varepsilon_i \varepsilon_{i+1} \ldots \varepsilon_n \left(\sum_{i=1}^{n} \frac{1}{v_i}\right)$$

with the porosity "ε" is the ratio of pore volume to the total volume of medium, "Σ" is the summation from "i" = 1 to n, and "M" is the mean flow pore diameter of the filter media layers and "v" is fluid velocity in cubic feet per minute over square feet (cfm/sq. ft.).